

Amendments to the claims:

1-28. (Cancelled).

29. (Currently amended) A transformed yeast strain to be used as a feed supplement for an animal, said transformed yeast strain being prepared by introducing into a host strain suitable for use as a feed supplement, comprising a nucleic acid polymer for encoding a polypeptide under control of a promoter, said ~~nucleic acid polymer having a sequence that encodes a~~ polypeptide with two or more comprising a plurality of amino acid residues, the amino acids composition of said in the polypeptide being including means for supplementing an animal diet according to the particular nutritional needs of said animal, the nutritional needs of the animal being ascertained by a feed analysis to determine the amino acid deficiency of the animal fed with a certain feed present in a ratio that offsets a deficiency in a predetermined feed source for a target animal, the deficiency being that the predetermined feed source presents amino acids in a ratio such that the weight increase the target animal gains when fed on the predetermined feed source alone is less than the weight increase the target animal gains over the same period when fed on the predetermined feed source and the feed supplement.

30. (Previously presented) The transformed yeast strain of claim 29, wherein the expression of said polypeptide is inducible.

31. (Previously presented) The transformed yeast strain of claim 29, wherein said nucleic acid polymer is inserted into said strain's genome.

32. (Previously presented) The transformed yeast strain of claim 29, wherein said polypeptide is retained in the cells of said strain.

33. (Previously presented) The transformed yeast strain of claim 29, wherein said strain is auxotrophic, but was non-auxotrophic prior to transformation.

34. (Previously presented) The transformed yeast strain of claim 29, wherein said strain is selected from the group consisting of *Saccharomyces cerevisiae*, *Pichia pastoris*, *P. stipidis*, *Yarrowia* spp, *Candida* spp, *Kluyveromyces waltii*, *K. lactis*, *K. drosophilium*, *Zygosaccharomyces* spp, *Schwannomyces occidentalis*, *Schizosaccharmyces pombe*, *Hansenula* spp, and *Torulaspora delbrueckii*.

35. (Previously presented) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: 3 methionine, 6 histidine, 6 lysine, 2 threonine, 2 isoleucine, 1 valine, and 1 tryptophan residues.

36. (Previously presented) The transformed yeast strain of claim 29 wherein said promoter is selected from the group consisting of AOX 1, GAP, FLD1, PEX8, YPT1, and GAPDH.

37. (Currently amended) A construct for insertion into a host organism to generate a transgenic organism to be used as a feed supplement for an animal, said construct being prepared by comprising a gene having placing a nucleic acid polymer for encoding a polypeptide ordinarily exogenous to said organism under control of and a promoter, with said construct selected from the group consisting of plasmids, cosmids, phagemids, and artificial chromosomes, said nucleic acid polymer having a sequence that codes for expression of a polypeptide comprising a plurality of amino acid residues, the amino acid composition of said polypeptide including means for supplementing an animal diet according to the particular nutritional needs of the animal, the nutritional needs of the animal being ascertained by a feed analysis to determine the amino acid deficiency of the animal fed with a certain feed two or more amino acid residues, the amino acids in the peptide being present in a ratio that offsets a deficiency in a predetermined feed source for a target animal, the deficiency being that the predetermined feed source presents amino acids in a ratio such that the weight increase the target animal gains when fed on the predetermined feed source alone is less than the weight increase the target animal gains over the same period when fed on the predetermined feed source and the organism transformed with said construct.

38. (Original) The construct of claim 37 wherein said construct is a pRS316 plasmid with a GAPDH promoter.

39. (Previously presented) The construct of claim 37 wherein said polypeptide comprising 6 Lysine, 3 Methionine/Cysteine; 2 Threonine; 1 Valine; 2 Isoleucine; 6 histidine; and 1 Tryptophan amino acid residues, wherein methionine/cysteine may be either methionine or cysteine.

40-42. (Cancelled).

43. (Previously presented) A method for producing a yeast additive for use in animal feed comprising, inserting the construct of claim 37 into a yeast strain, expressing the gene in said construct to produce a peptide.

44. (Currently amended) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: lysine, methionine/cysteine, threonine, valine, isoleucine, arginine, and tryptophan, in a ratio of about 100 : 60 : 60 : 75 : 60 : 80 : 20, wherein methionine/cysteine may be either methionine or cysteine.

45. (Currently amended)) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: lysine, and methionine/cysteine, ~~and histidine~~, in a ratio of ~~about 3~~ 100 : 33 ~~4~~, wherein methionine/cysteine may be either methionine or cysteine.

46. (Currently amended)) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: lysine, methionine/cysteine, arginine, and histidine, in a ratio of ~~about~~ 100 : 20 : 100 : 35, wherein methionine/cysteine may be either methionine or cysteine.

47. (Currently amended)) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: lysine, arginine, histidine, tryptophan, isoleucine, leucine, valine, phenylalanine/tyrosine, methionine/cysteine, threonine, proline, and glycine/serine, in a ratio of ~~about~~ 100 : 105 ~~100~~ : 37 ~~33~~ : 16 ~~15~~ : 67 : 111 ~~100~~ : 77 ~~75~~ : 105 ~~100~~ : 72 ~~75~~ : 67 : 33 : 67, wherein methionine/cysteine may be either methionine or cysteine with methionine constituting at least 50% of the sulfur-containing amino acids in the polypeptide, and phenylalanine/tyrosine may be either phenylalanine or tyrosine with phenylalanine constituting at least 50% of the aromatic amino acids in the polypeptide, and glycine/serine may be either glycine or serine.

48. (Currently amended)) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: lysine, arginine, histidine, tryptophan, isoleucine, leucine, valine, phenylalanine/tyrosine, methionine/cysteine, threonine, proline, and glycine/serine, in a ratio of ~~about~~ 100 : 105 ~~400~~ : 37 ~~33~~ : 17 ~~45~~ : 67 : 111 ~~400~~ : 77 ~~75~~ : 105 ~~400~~ : 75 : 73 ~~75~~ : 20 : 50, wherein methionine/cysteine may be either methionine or cysteine with methionine constituting at least 50% of the sulfur-containing amino acids in the polypeptide, and phenylalanine/tyrosine may be either phenylalanine or tyrosine with phenylalanine constituting at least 50% of the aromatic amino acids in the polypeptide, and glycine/serine may be either glycine or serine.

49. (Currently amended)) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: lysine, isoleucine, methionine/cysteine, phenylalanine/tyrosine, threonine, tryptophan, and valine, in a ratio of ~~about~~ 100 : 15 : 100 : 85 : 56 ~~50~~ : 18 ~~20~~ : 22 ~~20~~, wherein methionine/cysteine may be either methionine or cysteine, and phenylalanine/tyrosine may be either phenylalanine or tyrosine.

50. (Currently amended)) The transformed yeast strain of claim 29, wherein said nucleic acid polymer when expressed produces a polypeptide comprising the following amino acid units: arginine, methionine, lysine, threonine, and histidine, in a ratio of ~~about~~ 100 : 9 ~~40~~ : 53 ~~50~~ : 9 ~~40~~ : 23 ~~25~~.